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1 Publications

1.1 Peer-Reviewed Journal Articles

1. A.R. Sanderson, M.D. Meyer, R.M. Kirby, and C.R. Johnson. A Framework for Exploring Numerical Solutions of Advection-Reaction-Diffusion Equations Using a GPU-Based Approach. *Computing and Visualization in Science*, 2008.
2. E. Wes Bethel, Chris Johnson, Ken Joy, Sean Ahern, Valerio Pascucci, Hank Childs, Jonathan Cohen, Mark Duchaineau, Bernd Hamann, Charles Hansen, Dan Laney, Peter Lindstrom, Jeremy Meredith, George Ostrouchov, Steven Parker, Claudio Silva, Allen Sanderson, and Xavier Tricoche. SciDAC Visualization and Analytics Center for Enabling Technology. *Journal of Physics Conference Series – SciDAC 2007*, 78, June 2007. LBNL-63542.
3. C. Garth, F. Gerhardt, X. Tricoche, and H. Hagen. Efficient Computation and Visualization of Coherent Structures in Fluid Flow Applications. *IEEE Transactions on Visualization and Computer Graphics*, 13(6):1464–1471, 2007.
4. Gunther H. Weber, Peer-Timo Bremer, and Valerio Pascucci. Topological Landscapes: A Terrain Metaphor for Scientific Data. *IEEE Transactions on Visualization and Computer Graphics (Special Issue: Proceedings of IEEE Visualization 2007)*, 13(6):1416–1423, November/December 2007. LBNL-63763.
5. C. Jones, K.-L. Ma, A. Sanderson, and L. Myers. Visual Interrogation of Gyrokinetic Particle Simulations. *Journal of Physics Conference Series – SciDAC 2007*, 78, June 2007.
6. C. Scheidegger, H. Vo, D. Koop, J. Freire, and C.T. Silva. Querying and creating visualizations by analogy. *IEEE Transactions on Visualization and Computer Graphics*, 13(6):1560–1567, 2007. Winner of the Best Paper Award.
7. I. Wald, H. Friedrich, A. Knoll, and C.D. Hansen. Interactive Isosurface Ray Tracing of Time-Varying Tetrahedral Volumes. *IEEE Transactions on Visualization and Computer Graphics*, 13(6):1727–1734, 2007.
8. Kenneth I. Joy, Mark Miller, Hank Childs, E. Wes Bethel, John Clyne, George Ostrouchov, and Sean Ahern. Frameworks for Visualization at the Extreme Scale. *Journal of Physics Conference Series – SciDAC 2007*, 78, 2007. LBNL-63762.
9. A. Wiebel, X. Tricoche, D. Schneider, Heike Jänicke, and Gerik Scheuermann. Generalized Streak Lines: Analysis and Visualization of Boundary Induced Vortices. *IEEE Transactions on Visualization and Computer Graphics*, 13(6):1735–1742, 2007.
10. Luke Gosink, John C. Anderson, E. Wes Bethel, and Kenneth I. Joy. Variable Interactions in Query-Driven Visualization. *IEEE Transactions on Visualization and Computer Graphics (Proceedings of Visualization 2007)*, 13(6):1400–1407, November/December 2007. LBNL-63524.
11. Attila Gyulassy, Vijay Natarajan, Bernd Hamann, Mark Duchaineau, Valerio Pascucci, Eduardo Bringa, and Andres Higginbotham. Topologically Clean Distance Fields. *IEEE Transactions on Visualization and Computer Graphics (Proceedings of Visualization 2007)*, 13(6):1432–1439, November/December 2007.

12. Sung-Eui Yoon and Peter Lindstrom. Random-Accessible Compressed Triangle Meshes. *IEEE Transactions on Visualization and Computer Graphics (Proceedings of Visualization 2007)*, 13(6):1536–1543, November/December 2007.
13. Valerio Pascucci, Giorgio Scorzelli, Peer-Timo Bremer, and Ajith Mascarenhas. Robust On-line Computation of Reeb Graphs: Simplicity and Speed. *ACM Trans. Graph.*, 26(3):58, 2007.
14. P.-T. Bremer, E. Mm Bringa, M. A. Duchaineau, A. G. Ghylassy, D. Laney, A. Mascarenhas, and V. Pascucci. Topological Feature Extraction and Tracking. *Journal of Physics Conference Series – SciDAC 2007*, 78, June 2007.
15. Hank Childs. Architectural Challenges and Solutions for Petascale Postprocessing. *Journal of Physics Conference Series – SciDAC 2007*, 78, June 2007.

1.2 Conference Proceedings

1. Gunther H. Weber, Vincent E. Beckner, Hank Childs, Terry J. Ligocki, Mark Miller, Brian van Straalen, and E. Wes Bethel. Visualization Tools for Adaptive Mesh Refinement Data. In Werner Benger, Rene Heinzl, Wolfgang Kapferer, Wolfram Schoor, Mayank Tyagi, Shalini Venkataraman, and Gunther H. Weber, editors, *Proceedings of the 4th High End Visualization Workshop*, pages 12–25, Berlin, Germany, 2007. Lehmanns Media. LBNL-62954.

1.3 Invited Articles

1. E.W. Bethel, C.R. Johnson, C. Aragon, Prabhat, O. Rübel, G. Weber, V. Pascucci, H. Childs, P.-T. Bremer, B. Whitlock, S. Ahern, J. Meredith, G. Ostrouchov, K. Joy, B. Hamann, C. Garth, M. Cole, C. Hansen, S. Parker, A. Sanderson, C.T. Silva, and X. Tricoche. DOE’s SciDAC Visualization and Analytics Center for Enabling Technologies - Strategy for Petascale Visual Data Analysis Success. *CTWatch Quarterly*, 3(4), 2007.
2. Valerio Pascucci, Peer-Timo Bremer, and Ajith Mascarenhas. Topological Analysis Provides Deeper Insight into Hydrodynamic Instabilities. <http://www.sc.doe.gov/ascr/News/MonthlyNewsRoundup9-07.html>, September 2007.

1.4 Posters

1. E.W. Bethel, C.R. Johnson, C. Aragon, Prabhat, O. Rübel, G. Weber, V. Pascucci, H. Childs, P.-T. Bremer, A. Mascarenhas, B. Whitlock, S. Ahern, J. Meredith, G. Ostrouchov, K. Joy, B. Hamann, C. Garth, M. Cole, C. Hansen, S. Parker, A. Sanderson, C.T. Silva, and X. Tricoche. DOE SciDAC Visualization and Analytics Center for Enabling Technologies. In *2008 DOE ASCR CS PI Meeting*, Denver, CO, USA, April 2008.

2 Presentations

2.1 Invited Presentations

1. E. Wes Bethel. Query-Driven Visualization Accelerates Scientific Insight. In *National Science Foundation (NSF) and Cyber-enabled Discovery and Innovation (CDI) Workshop*, Mathematical Sciences Research Institute, Berkeley CA, USA, October 2007.

2. E. Wes Bethel. Occam's Razor and Petascale Visual Data Analysis. In *2007 Falls Creek Falls Conference*, Nashville, TN, USA, October 2007.
3. E. Wes Bethel. Visualization, VACET and the SciDAC Compass Accelerator Project. In *Community Petascale Project for Accelerator Science and Simulation (COMPASS) All-Hands Meeting*, Fermi National Laboratory, Batavia IL, USA, September 2007.
4. Valerio Pascucci. Robust Extraction and Tracking of Topological Features in Scientific Data: State of the Art and Future Challenges. In *Workshop on Feature Extraction and Tracking (Sponsored by the Institute for Ultrascale Visualization)*, UC Davis, Davis CA, USA, August 2007.